

### 4.8 Functions & Relations

$$g(x) = 2x - 7$$

Vertical Line Test

Function Notation

### Review!

Decide whether each relation is a function.

1) Input Output

1	→	2
2	→	4
3	→	5
4	→	5

2) Input Output

1	→	5
2	→	9
3	→	11
4	→	11

New!

### Function Notation

$f(x)$  DOES NOT mean "f times x"!

### Evaluating Functions

Ex. 1: Evaluate  $f(x) = 10x + 3$  when  $x = -2$

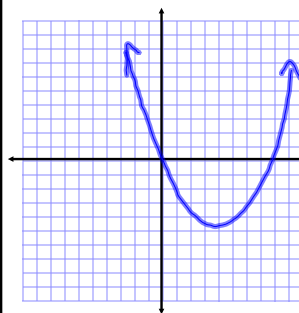
Ex. 2: Evaluate  $g(x) = 7 - 3x$  when  $x = 4$

### Vertical Line Test

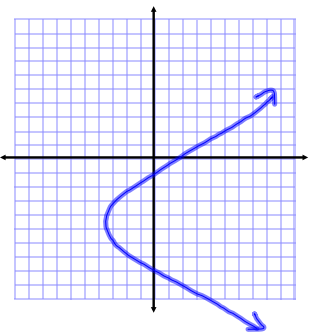
A relation is a function *if and only if* no vertical line passes through 2 or more points on the graph of the relation.

Check to see if these relations are functions using the Vertical Line Test.

Example 1:



Example 2:



Homework:

p.259-260: 11 - 19 all, 20 - 28 evens,  
29 - 31 all